

1 198. (New) The water-based drilling fluid of claim 196 wherein said low shear
2 rate viscosity comprises about 100,000 cP or more upon exposure to 0.3 rpm.

1 199. (New) The water-based drilling fluid of claim 196 further comprising a
2 concentration of non-toxic water emulsifiable material as an internal phase, said quantity
3 being sufficient to provide effective lubrication properties to said drilling fluid.

1 200. (New) The water-based drilling fluid of claim 197 further comprising a
2 concentration of non-toxic water emulsifiable material as an internal phase, said quantity
3 being sufficient to provide effective lubrication properties to said drilling fluid.

1 201. (New) The water-based drilling fluid of claim 196 wherein said surfactant
2 is selected from the group consisting of alkyl sulfates, alkyl ether sulfates, alkyl ether
3 sulfates, alkyl sulfonates, ethoxylated esters, ethoxylated glycoside esters, alcohol ethers,
4 and phosphated esters comprising about 8 to about 18 carbon atoms, alkali metal salts
5 thereof, and combinations thereof.

1 202. (New) The water-based drilling fluid of claim 196 wherein said surfactant
2 is selected from the group consisting of alkyl sulfates and alkyl ether sulfates.

1 203. (New) The water-based drilling fluid of claim 196 wherein said surfactant
2 comprises an alkyl ether sulfate.

1 204. (New) The water-based drilling fluid of claim 197 wherein said surfactant
2 is selected from the group consisting of alkyl sulfates, alkyl ether sulfates, alkyl
3 sulfonates, ethoxylated esters, ethoxylated glycoside esters, alcohol ethers, and
4 phosphated esters comprising about 8 to about 18 carbon atoms, alkali metal salts thereof,
5 and combinations thereof.

1 205. (New) The water-based drilling fluid of claim 197 wherein said surfactant
2 is selected from the group consisting of alkyl sulfates and alkyl ether sulfates.

1 206. (New) The water-based drilling fluid of claim 197 wherein said surfactant
2 comprises an alkyl ether sulfate.

1 207. (New) The water-based drilling fluid of claim 200 wherein said surfactant
2 is selected from the group consisting of alkyl sulfates, alkyl ether sulfates, alkyl
3 sulfonates, ethoxylated esters, ethoxylated glycoside esters, alcohol ethers, and
4 phosphated esters comprising about 8 to about 18 carbon atoms, alkali metal salts thereof,
5 and combinations thereof.

1 208. (New) The water-based drilling fluid of claim 200 wherein said surfactant
2 is selected from the group consisting of alkyl sulfates and alkyl ether sulfates.

1 209. (New) The water-based drilling fluid of claim 200 wherein said surfactant
2 comprises an alkyl ether sulfate.

1 210. (New) The water-based drilling fluid of claim 196 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 211. (New) The water-based drilling fluid of claim 197 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 212. (New) The water-based drilling fluid of claim 200 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 213. (New) The water-based drilling fluid of claim 196 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 214. (New) The water-based drilling fluid of claim 197 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 215. (New) The water-based drilling fluid of claim 200 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 216. (New) The water-based drilling fluid of claim 212 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 217. (New) The water-based drilling fluid of claim 196 wherein said effective
2 fluid loss control properties is a fluid loss of about 1 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 218. (New) The water based drilling fluid of claim 197 wherein said surfactant
2 produces a reduced surface tension of said water based drilling fluid.

1 219. (New) The water based drilling fluid of claim 218 wherein said reduced
2 surface tension of said water based drilling fluid is from about 25 to about 40 nN/m.

1 220. (New) The water-based drilling fluid of claims 212 wherein said
2 concentration is from about 2 to about 20 vol.%.

1 221. (New) The water-based drilling fluid of claim 196 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of modified
3 polysaccharides having a weight average molecular weight of about 500,000 to about
4 2,500,000.

1 222. (New) The water-based drilling fluid of claim 196 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of modified
3 polysaccharides having a weight average molecular weight of about from about 700,000
4 to about 1,200,000.

1 223. (New) The water-based drilling fluid of claim 196 wherein said water-
2 soluble polymer comprises xanthan polysaccharides.

1 224. (New) The water-based drilling fluid of claim 219 wherein said water-
2 soluble polymer comprises xanthan polysaccharides.

1 225. (New) The water-based drilling fluid of claim 196 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of synthetically
3 modified starches having a weight average molecular weight of from about 200,000 to
4 about 2,500,000.

1 226. (New) The water-based drilling fluid of claim 196 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of synthetically
3 modified starches having a weight average molecular weight of from about 600,000 to
4 about 1,000,000.

1 227. (New) The water-based drilling fluid of claim 221 wherein said
2 synthetically modified polysaccharides comprise a functional group selected from the
3 group consisting of a carboxymethyl group, a propylene glycol group, and an
4 epichlorohydrin group.

1 228. (New) The water-based drilling fluid of claim 225 wherein said
2 synthetically modified starches comprise a functional group selected from the group

3 consisting of a carboxymethyl group, a propylene glycol group, and an epichlorohydrin
4 group.

1 229. (New) The water-based drilling fluid of claim 224 has a density of about
2 7.9 lb/gal. or more.

1 230. (New) A water-based drilling fluid:
2 an aqueous base;
3 a quantity of water soluble polymer;
4 an amount of surfactant in association with said water soluble polymer;
5 wherein said quantity, said amount, and said association provide said water- based
6 drilling fluid effective rheology and fluid loss control properties
7 comprising low shear rate viscosity; and
8 a concentration of non-toxic water emulsifiable material as an internal phase, said
9 surfactant being effective to emulsify said water emulsifiable material and
10 to produce emulsion droplets having an average diameter of about 30
11 microns or less.

1 231. (New) The water-based drilling fluid of claim 230 wherein said surfactant
2 is selected from the group consisting of alkyl sulfates, alkyl ether sulfates, alkyl
3 sulfonates, ethoxylated esters, ethoxylated glycoside esters, alcohol ethers, and
4 phosphated esters comprising about 8 to about 18 carbon atoms, alkali metal salts thereof,
5 and combinations thereof.

1 232. (New) The water-based drilling fluid of claim 230 wherein said surfactant
2 is selected from the group consisting of alkyl sulfates and alkyl ether sulfates.

1 233. (New) The water-based drilling fluid of claim 230 wherein said surfactant
2 comprises an alkyl ether sulfate.

1 234. (New) The water-based drilling fluid of claim 230 wherein said surfactant
2 is sodium tridecyl ether sulfate.

1 235. (New) The water-based drilling fluid of claim 230 wherein said surfactant
2 is effective to emulsify said water emulsifiable material and to produce emulsion droplets
3 having an average diameter of about 20 microns or less.

1 236. (New) The water-based drilling fluid of claim 230 wherein said surfactant
2 is effective to emulsify said water emulsifiable material and to produce emulsion droplets
3 having an average diameter of about 15 microns or less.

1 237. (New) The water-based drilling fluid of claim 230 wherein said surfactant
2 is effective to emulsify said water emulsifiable material and to produce emulsion droplets
3 having an average diameter of about 5 microns or less.

1 238. (New) The water-based drilling fluid of claim 230 wherein said low shear
2 rate viscosity is about 70,000 cP or more upon exposure to 0.3 rpm.

1 239. (New) The water-based drilling fluid of claim 230 wherein said low shear
4 rate viscosity is about 100,000 cP or more upon exposure to 0.3 rpm.

1 240. (New) The water-based drilling fluid of claim 232 wherein said low shear
2 rate viscosity is about 70,000 cP or more upon exposure to 0.3 rpm.

1 241. (New) The water-based drilling fluid of claim 230 wherein said
2 concentration is from about 2 to about 20 vol.%.

1 242. (New) The water-based drilling fluid of claim 238 wherein said
2 concentration is from about 2 to about 20 vol.%.

1 243. (New) The water-based drilling fluid of claim 238 wherein said
2 concentration is about 5 vol.% .

1 244. (New) The water-based drilling fluid of claim 230 wherein said non-toxic
2 water emulsifiable material is a water insoluble material selected from the group
3 consisting of olefins, paraffins, water insoluble glycols, water insoluble esters, water
4 insoluble Fischer-Tropsch reaction products, and combinations thereof.

1 245. (New) The water-based drilling fluid of claim 238 wherein said water
2 emulsifiable material is a water insoluble material selected from the group consisting of
3 olefins, paraffins, water insoluble glycols, and combinations thereof.

1 246. (New) The water-based drilling fluid of claim 240 wherein said water
2 emulsifiable material is a water insoluble material selected from the group consisting of
3 olefins, paraffins, water insoluble glycols, and combinations thereof.

1 247. (New) The water-based drilling fluid of claim 230 wherein said fluid
2 consists essentially of additives other a solid bridging agent.

1 248. (New) The water-based drilling fluid of claim 232 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 249. (New) The water-based drilling fluid of claim 238 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 250. (New) The water-based drilling fluid of claim 240 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 251. (New) The water-based drilling fluid of claim 230 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 252. (New) The water-based drilling fluid of claim 247 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 253. (New) The water-based drilling fluid of claim 248 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 254. (New) The water-based drilling fluid of claim 249 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 255. (New) The water-based drilling fluid of claim 230 wherein said effective
2 fluid loss control properties is a fluid loss of about 1 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 256. (New) The water-based drilling fluid of claim 248 wherein said effective
2 fluid loss control properties is a fluid loss of about 1 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 257. (New) The water-based drilling fluid of claim 230 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,

4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 258. (New) The water-based drilling fluid of claim 238 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,
4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 259. (New) The water-based drilling fluid of claim 240 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,
4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 260. (New) The water-based drilling fluid of claim 247 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,
4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 261. (New) The water based drilling fluid of claim 230 wherein said surfactant
2 produces a reduced surface tension of said water based drilling fluid.

1 262. (New) The water based drilling fluid of claim 261 wherein said reduced
2 surface tension of said water based drilling fluid is from about 25 to about 40 nN/m.

1 263. (New) The water based drilling fluid of claim 247 wherein said surfactant
2 produces a reduced surface tension of said water based drilling fluid.

1 264. (New) The water based drilling fluid of claim 263 wherein said reduced
2 surface tension of said water based drilling fluid is from about 25 to about 40 nN/m.

1 265. (New) The water-based drilling fluid of claim 257 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of modified
3 polysaccharides having a weight average molecular weight of about 500,000 to about
4 2,500,000.

1 266. (New) The water-based drilling fluid of any of claims 257 wherein said
2 water soluble polymer comprises polymers selected from the group consisting of
3 modified polysaccharides having a weight average molecular weight of about from about
4 700,000 to about 1,200,000.

1 267. (New) The water-based drilling fluid of claim 257 wherein said water-
2 soluble polymer comprises xanthan polysaccharides.

1 268. (New) The water-based drilling fluid of claim 257 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of synthetically
3 modified starches having a weight average molecular weight of from about 200,000 to
4 about 2,500,000.

1 269. (New) The water-based drilling fluid of claim 257 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of synthetically
3 modified starches having a weight average molecular weight of from about 600,000 to
4 about 1,000,000.

1 270. (New) The water-based drilling fluid of claim 268 wherein said
2 synthetically modified starches comprise a functional group selected from the group
3 consisting of a carboxymethyl group, a propylene glycol group, and an epichlorohydrin
4 group.

1 271. (New) The water-based drilling fluid of claim 265 wherein said
2 synthetically modified polysaccharides comprise a functional group selected from the
3 group consisting of a carboxymethyl group, a propylene glycol group, and an
4 epichlorohydrin group.

1 272. (New) A water-based drilling fluid comprising:
2 an aqueous base;
3 at least about 2 lb./bbl. water soluble polymer; and,
4 at least about 0.2 lb./bbl. of a surfactant in association with said water soluble
5 polymer;
6 wherein said water soluble polymer, said surfactant, and said association provide
7 said water- based drilling fluid with effective rheology and fluid loss
8 control properties comprising low shear rate viscosity.

1 273. (New) The water-based drilling fluid of claim 272 wherein said surfactant
2 is selected from the group consisting of alkyl sulfates, alkyl ether sulfates, alkyl
3 sulfonates, ethoxylated esters, ethoxylated glycoside esters, alcohol ethers, and
4 phosphated esters comprising about 8 to about 18 carbon atoms, alkali metal salts thereof,
5 and combinations thereof.

1 274. (New) The water-based drilling fluid of claim 272 wherein said surfactant
2 is selected from the group consisting of alkyl sulfates and alkyl ether sulfates.

1 275. (New) The water-based drilling fluid of claim 272 wherein said surfactant
2 comprises an alkyl ether sulfate.

1 276. (New) The water-based drilling fluid of claim 272 wherein said surfactant
2 is sodium tridecyl ether sulfate.

1 277. (New) The water-based drilling fluid of claim 272 wherein said low shear
2 rate viscosity is about 70,000 cP or more upon exposure to 0.3 rpm.

1 278. (New) The water-based drilling fluid of claim 272 wherein said low shear
2 rate viscosity is about 100,000 cP or more upon exposure to 0.3 rpm.

1 279. (New) The water-based drilling fluid of claim 274 wherein said low shear
2 rate viscosity is about 70,000 cP or more upon exposure to 0.3 rpm.

1 280. (New) The water-based drilling fluid of claim 275 wherein said low shear
2 rate viscosity is about 70,000 cP or more upon exposure to 0.3 rpm.

1 281. (New) The water-based drilling fluid of claim 276 wherein said low shear
2 rate viscosity is about 70,000 cP or more upon exposure to 0.3 rpm.

1 282. (New) The water-based drilling fluid of claim 272 further comprising a
2 concentration of non-toxic water emulsifiable material as an internal phase.

1 283. (New) The water-based drilling fluid of claim 274 further comprising a
2 concentration of non-toxic water emulsifiable material as an internal phase.

1 284. (New) The water-based drilling fluid of claim 276 further comprising a
2 concentration of non-toxic water emulsifiable material as an internal phase.

1 285. (New) The water-based drilling fluid of claim 277 further comprising a
2 concentration of non-toxic water emulsifiable material as an internal phase.

1 286. (New) The water-based drilling fluid of claim 279 further comprising a
2 concentration of non-toxic water emulsifiable material as an internal phase.

1 287. (New) The water-based drilling fluid of claim 280 further comprising a
2 concentration of non-toxic water emulsifiable material as an internal phase.

1 288. (New) The water-based drilling fluid of claim 281 further comprising a
2 concentration of non-toxic water emulsifiable material as an internal phase.

1 289. (New) The water-based drilling fluid of claim 282 wherein said
2 concentration is from about 2 to about 20 vol.%.

1 290. (New) The water-based drilling fluid of claim 288 wherein said
2 concentration is from about 2 to about 20 vol.%.

1 291. (New) The water-based drilling fluid of claim 276 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 292. (New) The water-based drilling fluid of claim 277 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 293. (New) The water-based drilling fluid of claim 279 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 294. (New) The water-based drilling fluid of claim 281 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 295. (New) The water-based drilling fluid of claim 272 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 296. (New) The water-based drilling fluid of claim 277 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 297. (New) The water-based drilling fluid of claim 291 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 298. (New) The water-based drilling fluid of claim 292 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 299. (New) The water-based drilling fluid of claim 293 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 300. (New) The water-based drilling fluid of claim 294 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 301. (New) The water-based drilling fluid of claim 272 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,

4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 302. (New) The water-based drilling fluid of claim 291 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,
4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 303. (New) The water-based drilling fluid of claim 292 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,
4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 304. (New) The water-based drilling fluid of claim 293 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,
4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 305. (New) The water based drilling fluid of claim 272 wherein said surfactant
2 produces a reduced of said water based drilling fluid.

1 306. (New) The water based drilling fluid of claim 305 wherein said reduced
2 surface tension of said water based drilling fluid is from about 25 to about 40 nN/m.

1 307. (New) The water based drilling fluid of claim 291 wherein said surfactant
2 produces a reduced surface tension of said water based drilling fluid.

1 308. (New) The water based drilling fluid of claim 307 wherein said reduced
2 surface tension of said water based drilling fluid is from about 25 to about 40 nN/m.

1 309. (New) The water based drilling fluid of claim 292 wherein said surfactant
2 produces a reduced surface tension of said water based drilling fluid.

1 310. (New) The water based drilling fluid of claim 309 wherein said reduced
2 surface tension of said water based drilling fluid is from about 25 to about 40 nN/m.

1 311. (New) The water-based drilling fluid of claim 272 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of modified
3 polysaccharides having a weight average molecular weight of about 500,000 to about
4 2,500,000.

1 312. (New) The water-based drilling fluid of any of claims 272 wherein said
2 water soluble polymer comprises polymers selected from the group consisting of
3 modified polysaccharides having a weight average molecular weight of about from about
4 700,000 to about 1,200,000.

1 313. (New) The water-based drilling fluid of claim 272 wherein said water-
2 soluble polymer comprises xanthan polysaccharides.

1 314. (New) The water-based drilling fluid of claim 276 wherein said water-
2 soluble polymer comprises xanthan polysaccharides.

1 315. (New) The water-based drilling fluid of claim 291 wherein said water-
2 soluble polymer comprises xanthan polysaccharides.

1 316. (New) The water-based drilling fluid of claim 292 wherein said water-
2 soluble polymer comprises xanthan polysaccharides.

1 317. (New) The water-based drilling fluid of claim 293 wherein said water-
2 soluble polymer comprises xanthan polysaccharides.

1 318. (New) The water-based drilling fluid of claim 294 wherein said water-
2 soluble polymer comprises xanthan polysaccharides.

1 319. (New) The water-based drilling fluid of claim 272 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of synthetically
3 modified starches having a weight average molecular weight of from about 200,000 to
4 about 2,500,000.

1 320. (New) The water-based drilling fluid of claim 272 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of synthetically
3 modified starches having a weight average molecular weight of from about 600,000 to
4 about 1,000,000.

1 321. (New) The water-based drilling fluid of claim 319 wherein said
2 synthetically modified starches comprise a functional group selected from the group
3 consisting of a carboxymethyl group, a propylene glycol group, and an epichlorohydrin
4 group.

1 322. (New) The water-based drilling fluid of claim 311 wherein said
2 synthetically modified polysaccharides comprise a functional group selected from the
3 group consisting of a carboxymethyl group, a propylene glycol group, and an
4 epichlorohydrin group.

1 323. (New) The water-based drilling fluid of claim 272 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEXTM D and BIOLOSETM.

1 324. (New) The water-based drilling fluid of claim 276 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEXTM D and BIOLOSETM.

1 325. (New) The water-based drilling fluid of claim 291 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEXTM D and BIOLOSETM.

1 326. (New) The water-based drilling fluid of claim 292 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEXTM D and BIOLOSETM.

1 327. (New) The water-based drilling fluid of claim 293 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEXTM D and BIOLOSETM.

1 328. (New) The water-based drilling fluid of claim 294 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEXTM D and BIOLOSETM.

1 329. (New) A water-based drilling fluid comprising:
2 an aqueous base;
3 about 7.5 lb./bbl. water soluble polymer; and,
4 about 2 lb./bbl. of a surfactant in association with said water soluble polymer;
5 wherein said water soluble polymer, said surfactant, and said association provide
6 said water- based drilling fluid with effective rheology and fluid loss.
7 control properties comprising low shear viscosity.

1 330. (New) The water-based drilling fluid of claim 329 wherein said surfactant
2 is selected from the group consisting of alkyl sulfates, alkyl ether sulfates, alkyl
3 sulfonates, ethoxylated esters, ethoxylated glycoside esters, alcohol ethers, and

4 phosphated esters comprising about 8 to about 18 carbon atoms, alkali metal salts thereof,
5 and combinations thereof.

1 331. (New) The water-based drilling fluid of claim 329 wherein said surfactant
2 is selected from the group consisting of alkyl sulfates and alkyl ether sulfates.

1 332. (New) The water-based drilling fluid of claim 329 wherein said surfactant
2 comprises an alkyl ether sulfate.

1 333. (New) The water-based drilling fluid of claim 329 wherein said surfactant
2 is sodium tridecyl ether sulfate.

1 334. (New) The water-based drilling fluid of claim 329 wherein said low shear
2 rate viscosity is about 70,000 cP or more upon exposure to 0.3 rpm.

1 335. (New) The water-based drilling fluid of claim 329 wherein said low shear
2 rate viscosity is about 100,000 cP or more upon exposure to 0.3 rpm.

1 336. (New) The water-based drilling fluid of claim 331 wherein said low shear
2 rate viscosity is about 70,000 cP or more upon exposure to 0.3 rpm.

1 337. (New) The water-based drilling fluid of claim 332 wherein said low shear
2 rate viscosity is about 70,000 cP or more upon exposure to 0.3 rpm.

1 338. (New) The water-based drilling fluid of claim 333 wherein said low shear
2 rate viscosity is about 70,000 cP or more upon exposure to 0.3 rpm.

1 339. (New) The water-based drilling fluid of claim 329 further comprising a
2 concentration of non-toxic water emulsifiable material as an internal phase.

1 340. (New) The water-based drilling fluid of claim 339 wherein said
2 concentration is from about 2 to about 20 vol.%.

1 341. (New) The water-based drilling fluid of claim 329 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 342. (New) The water-based drilling fluid of claim 331 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 343. (New) The water-based drilling fluid of claim 334 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 344. (New) The water-based drilling fluid of claim 336 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 345. (New) The water-based drilling fluid of claim 337 wherein said fluid
2 consists essentially of additives other than a solid bridging agent.

1 346. (New) The water-based drilling fluid of claim 329 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 347. (New) The water-based drilling fluid of claim 341 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 348. (New) The water-based drilling fluid of claim 342 wherein said effective
2 fluid loss control properties is a fluid loss of about 5 ml./30 min. or less using the
3 standard dynamic filtration fluid loss test.

1 349. (New) The water-based drilling fluid of claim 329 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,

4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 350. (New) The water-based drilling fluid of claim 341 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,
4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 351. (New) The water-based drilling fluid of claim 344 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,
4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 352. (New) The water based drilling fluid of claim 329 wherein said surfactant
2 produces a reduced surface tension of said water based drilling fluid.

1 353. (New) The water based drilling fluid of claim 352 wherein said reduced
2 surface tension of said water based drilling fluid is from about 25 to about 40 nN/m.

1 354. (New) The water based drilling fluid of claim 341 wherein said surfactant
2 produces a reduced surface tension of said water based drilling fluid.

1 355. (New) The water based drilling fluid of claim 354 wherein said reduced
2 surface tension of said water based drilling fluid is from about 25 to about 40 nN/m.

1 356. (New) The water based drilling fluid of claim 346 wherein said surfactant
2 produces a reduced surface tension of said water based drilling fluid.

1 357. (New) The water based drilling fluid of claim 356 wherein said reduced
2 surface tension of said water based drilling fluid is from about 25 to about 40 nN/m.

1 358. (New) The water-based drilling fluid of claim 351 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of modified
3 polysaccharides having a weight average molecular weight of about 500,000 to about
4 2,500,000.

1 359. (New) The water-based drilling fluid of any of claims 351 wherein said
2 water soluble polymer comprises polymers selected from the group consisting of
3 modified polysaccharides having a weight average molecular weight of about from about
4 700,000 to about 1,200,000.

1 360. (New) The water-based drilling fluid of claim 351 wherein said water-
2 soluble polymer comprises xanthan polysaccharides.

1 361. (New) The water-based drilling fluid of claim 351 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of synthetically
3 modified starches having a weight average molecular weight of from about 200,000 to
4 about 2,500,000.

1 362. (New) The water-based drilling fluid of claim 351 wherein said water
2 soluble polymer comprises polymers selected from the group consisting of synthetically
3 modified starches having a weight average molecular weight of from about 600,000 to
4 about 1,000,000.

1 363. (New) The water-based drilling fluid of claim 361 wherein said
2 synthetically modified starches comprise a functional group selected from the group

3 consisting of a carboxymethyl group, a propylene glycol group, and an epichlorohydrin
4 group.

1 364. (New) The water-based drilling fluid of claim 358 wherein said
2 synthetically modified polysaccharides comprise a functional group selected from the
3 group consisting of a carboxymethyl group, a propylene glycol group, and an
4 epichlorohydrin group.

1 365. (New) The water-based drilling fluid of claim 329 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEX™ D and BIOLOSE™.

1 366. (New) The water-based drilling fluid of claim 331 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEX™ D and BIOLOSE™.

1 367. (New) The water-based drilling fluid of claim 341 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEX™ D and BIOLOSE™.

1 368. (New) The water-based drilling fluid of claim 344 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEX™ D and BIOLOSE™.

1 369. (New) The water-based drilling fluid of claim 345 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEX™ D and BIOLOSE™.

1 370. (New) A water-based drilling fluid comprising:
2 about 7.5 lb./bbl. water soluble polymer;
3 about 2 lb./bbl. of a surfactant in association with said water soluble polymer; and
4 a concentration of a non-toxic water emulsifiable material as an internal phase;

5 wherein said water soluble polymer, said surfactant, and said association provide
6 said water- based drilling fluid with effective rheology and fluid loss
7 control properties comprising low shear viscosity

1 371. (New) The water-based drilling fluid of claim 370 wherein said surfactant
2 is sodium tridecyl ether sulfate.

1 372. (New) The water-based drilling fluid of claim 370 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,
4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 373. (New) The water-based drilling fluid of claim 371 wherein said water
2 soluble polymer is selected from the group consisting of water soluble starches and
3 modified versions thereof, water-soluble polysaccharides and modified versions thereof,
4 and water-soluble celluloses and modified versions thereof, and water soluble
5 polyacrylamides and copolymers thereof, and combinations thereof.

1 374. (New) The water-based drilling fluid of claim 371 wherein said water
2 soluble polymer is a combination comprising from about 40 to about 60 wt.% of a
3 xanthan polysaccharide and about from about 40 to about 60 wt.% synthetically modified
4 starch comprising one or more functional groups selected from the group consisting of
5 carboxymethyl, propylene glycol, and epichlorohydrin functional groups.

1 375. (New) The water-based drilling fluid of claim 371 wherein said water
2 soluble polymer is a combination comprising about 50 wt.% xanthan polysaccharide and

3 about 50 wt.% synthetically modified starch comprising one or more functional groups
4 selected from the group consisting of carboxymethyl, propylene glycol, and
5 epichlorohydrin functional groups.

1 376. (New) A water-based drilling fluid comprising:
2 an aqueous base;
3 about 7.5 lb./bbl. of water soluble polymer comprising a combination of about 50
4 wt.% xanthan polysaccharide and about 50 wt.% synthetically modified
5 starch comprising one or more functional groups selected from the group
6 consisting of a carboxymethyl group, a propylene glycol group, and an
7 epichlorohydrin functional group;
8 about 2 lb./bbl. sodium tridecyl ether sulfate; .
9 wherein said water soluble polymer, said surfactant, and said association provide
10 said water-based drilling fluid with effective rheology and fluid loss
11 control properties comprising low shear viscosity; and
12 wherein said water-based fluid consists essentially of additives other than solid
13 bridging agents.

1 377. (New) The water based drilling fluid of claim 376 further comprising a
2 concentration of a non-toxic water emulsifiable material as an internal phase.

1 378. (New) The water-based drilling fluid of claim 377 wherein said non-toxic
2 water emulsifiable material is a water insoluble material selected from the group
3 consisting of olefins, paraffins, water insoluble glycols, water insoluble esters, water
4 insoluble Fischer-Tropsch reaction products, and combinations thereof.

1 379. (New) The water-based drilling fluid of claim 376 further comprising an
2 alkali metal salt of a compound selected from the group consisting of a thiosulfate and a
3 thiosulfonate.

1 380. (New) The water-based drilling fluid of claim 377 further comprising an
2 alkali metal salt of a compound selected from the group consisting of a thiosulfate and a
3 thiosulfonate.

1 381. (New) The water-based drilling fluid of claim 376 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEXTM D and BIOLOSETM.

1 382. (New) The water-based drilling fluid of claim 377 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEXTM D and BIOLOSETM.

1 383. (New) The water-based drilling fluid of claim 379 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEXTM D and BIOLOSETM.

1 384. (New) The water-based drilling fluid of claim 380 wherein said water
2 soluble polymer comprises 50/50 wt.% XAN-PLEXTM D and BIOLOSETM.